

**Table 4**  
**Tacoma Smelter**  
**Chronology Studies**

Type	Reference	Comments
Sediment Profiles	Crececius 1974 Crececius et al. 1975 Carpenter et al. 1978	As and Sb determined in age-dated sediment core in Quartermaster Harbor (Vashon-Maury Island)
	Crececius 1974 Crececius 1975	As determined in multiple sediment cores from Lake Washington
	Crececius and Piper 1973	Pb determined in sediment cores from Lake Washington
	Lefkovitz et al. 1997	six age-dated sediment cores from main basin of Puget Sound, analyzed for multiple metals
Smelter Strike	McClannan 1974 McClannan and Rossano 1975	As, Sb, Cd, Pb, Hg, Mn,Se, Zn determined for daily airborne particulate samples, 10 locations; operating-to-strike period ratios all showed increases
Pollution Rose	Buchan 1967	SO2 wind rose shows highest values with SSW winds; supported by smelter plume diffusion calculations; high ambient As in Seattle also noted
	Crececius 1974	As and Sb in ambient particulate samples at U. of Washington campus strongly associated with wind direction

	Hatfield 1976	As, Cd, Cu mostly in fine fraction of ambient particulates and correlated; suggested relationship of higher arsenic with winds from southern quadrant (p=0.11)
	PSAPCA 1981	SO <sub>2</sub> wind roses for multiple monitoring stations (see Appendix D)
Smelter Closure	Vong et al. 1986	overview of the ASARCO Smelter Closure Rain Chemistry Study (U. of Washington); samples collected at multiple locations for multiple storms pre- and post-closure
	Faulkner 1987	precipitation chemistry at stations along US/Canada border showed significant As decrease after closure
	Moseholm 1986 Vong et al. 1988	excess sulfate in rain samples showed significant decrease to 25 km downwind after closure
	Scattarella 1988	smelter emissions shown to have downwind impacts on Pb in rainfall
	Peterson II 1991	rainwater chemistry showed influence of smelter source (As, Sb, Cu, Se, and sulfate); post-closure rainfall chemistry discriminated largely for decreased As, Sb
	Welch et al. 1992	decreasing trend in alpine lake sulfate associated with smelter emissions time trend up to and after closure